Patent Claims

1. Liquid formulation which comprises human interferon-β as active ingredient in a concentration of up to 25 MU/ml and a buffer for setting a pH of 5 to 8, is free from human serum albumin and shows a long-term stability of the biological activity (in vitro) of at least 80% of the initial activity after storage for 3 months at 25°C.

2. Liquid formulation which comprises human interferon-β as active ingredient and a buffer for setting a pH of 6 to 7.2, is free from human serum albumin and shows a long-term stability of the biological activity (in vitro) of at least 80% of the initial activity after storage for 3 months at 25°C.

3. Liquid formulation which comprises human interferon-β as active ingredient, a buffer for setting a pH of 5 to 8, and one or more amino acids and shows a long-term stability of the biological activity (in vitro) of at least 80% of the initial activity after storage for 3 months at 25°C.

4. Formulation according to Claim 1, **characterized in that** it comprises a glycosylated interferon-β.

5. Formulation according to Claim 2, **characterized in that** the interferon-β originates from CHO cells.

6. Formulation according to ~~any of Claims 1 to 5~~ Claim 1, **characterized in that**

it comprises the buffer in a concentration of 10 mmol/l to 1 mol/l.

7. Formulation according to ~~any of Claims 1 to 6~~ claim 1, **characterized in that** it comprises a buffer selected from the group consisting of phosphate, citrate and acetate buffers and mixtures of these.

8. Formulation according to Claim 7, **characterized in that** it comprises a phosphate/citrate buffer.

9. Formulation according to ~~any of Claims 1 and 3 to 8~~ claim 1, **characterized in that** it has a pH between 6 and 7.2.

10. Formulation according to Claim 3, **characterized in that** it is free from human serum albumin.

11. Formulation according to ~~any of Claims 1 to 10~~ claim 1, **characterized in that,** apart from the active ingredient, it is free from human or animal polypeptides.

12. Formulation according to ~~any of Claims 1 to 11~~ claim 1, **characterized in that** it is free from surfactants.

13. Formulation according to ~~any of Claims 1 to 12~~ claim 1, **characterized in that** it exhibits a chemical integrity after storage for 6 months at 25°C.

14. Formulation according to ~~any of Claims 1 to 13~~ claim 1, **characterized in that**

it exhibits a physical integrity after storage for 6 months at 25°C.

15. Formulation according to ~~any of Claims 1, 2 and 4 to 14~~ claim 1, **characterized in that** it furthermore comprises one or more amino acids.

16. Formulation according to Claim 3 ~~or 15~~, **characterized in that** it comprises methionine.

17. Formulation according to Claim 16, **characterized in that** the methionine is present in a concentration of 0.1 to 4 mmol/l.

18. Formulation according to ~~any of Claims 1 to 17~~ claim 1, **characterized in that** it furthermore comprises auxiliaries for adjusting the tonicity.

19. Formulation according to ~~any of Claims 1 to 18~~ claim 1, **characterized in that** it furthermore comprises thickeners for increasing the viscosity

20. Formulation according to ~~any of Claims 1 to 19~~ claim 1, **characterized in that** it furthermore comprises physiologically acceptable preservatives.

21. Pharmaceutical preparation, **characterized in that** it comprises a liquid formulation according to ~~any of Claims 1 to 20~~ claim 1.

22. Pharmaceutical preparation according to Claim 21 for oral, parenteral or ophthalmological administration.

23. Pharmaceutical preparation according to Claim 21 ~~or 22~~ with unit doses of 1 to 25 MU.

24. Process for the preparation of a pharmaceutical preparation according to any of Claims 21 to 23,
characterized in that
a formulation according to any of Claims 1 to 20 and, if appropriate, other pharmaceutical formulation auxiliaries which are necessary is prepared and formulated as a suitable dosage form.

25. Process for improving the shelf life of a liquid formulation which comprises human interferon-β as active ingredient and a buffer for setting a pH of 5 to 8,
characterized in that
a formulation without human serum albumin or/and with one or more amino acids is used.

26. Process according to Claim 25,
characterized in that
the improved shelf life encompasses improved long-term stability of the biological activity (in vitro), of the chemical integrity or/and of the physical integrity.